

2004

## Specialty Soybean Test—South

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### Recommended Citation

Scholbrock, Kevin O., "Specialty Soybean Test—South" (2004). *Iowa State Research Farm Progress Reports*. 1318.  
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# Specialty Soybean Test—South

## **Abstract**

The purpose of this test is to evaluate the experimental food-type soybean lines adapted to southern Iowa. The 2003 Specialty Test included commodity yellow hilum, large seed, large seed high protein, small seed, and lipoxygenase-free experimental lines, and for comparison of agronomic traits, commercially grown varieties released by Iowa State University. Large seed, large seed high protein, small seed, and lipoxygenase-free soybean varieties grown in Iowa are used to fill a niche in the food-bean market. These soybeans are mainly exported to Japan. Large seed soybeans are used in the production of miso and are consumed as a vegetable. Large seed high protein soybeans are used for tofu production. Small seed soybeans are used to create natto. Lipoxygenase-free soybeans have less of the “beany” flavor associated with conventional varieties. This flavor trait is desirable in producing soy-based foods, such as soy milk.

## **Keywords**

Agronomy

## **Disciplines**

Agricultural Science | Agriculture | Agronomy and Crop Sciences

## Specialty Soybean Test—South

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### Introduction

The purpose of this test is to evaluate the experimental food-type soybean lines adapted to southern Iowa. The 2003 Specialty Test included commodity yellow hilum, large seed, large seed high protein, small seed, and lipoxygenase-free experimental lines, and for comparison of agronomic traits, commercially grown varieties released by Iowa State University. Large seed, large seed high protein, small seed, and lipoxygenase-free soybean varieties grown in Iowa are used to fill a niche in the food-bean market. These soybeans are mainly exported to Japan. Large seed soybeans are used in the production of miso and are consumed as a vegetable. Large seed high protein soybeans are used for tofu production. Small seed soybeans are used to create natto. Lipoxygenase-free soybeans have less of the “beany” flavor associated with conventional varieties. This flavor trait is desirable in producing soy-based foods, such as soy milk.

### Methods

The specialty soybean test for the southern district was planted at five Iowa locations - Ames, Atlantic, Carlisle, Richland, and

Winterset. At each location, three replications of four-row plots were planted. The plots were 12 feet long with 27-inch row spacing. The seeding rate was nine seeds/foot. Agronomic characteristics evaluated at Atlantic included plant height and lodging susceptibility. The center two rows were harvested using a self-propelled research plot combine. The moisture and weight of each plot were measured on the combine during harvest. The harvested seed was brought to Ames for seed weight calculation and oil and protein analysis.

### Results

The test results of the SCN resistant experimental lines A00-711003 and A00-711013, the large seed experimental line A00-913017, and the commodity varieties IA2021, IA2061, and Macon are summarized in Table 1. The data obtained from the test helped determine that A00-711013 should be released and the other two specialty soybean varieties should not be released.

### Acknowledgments

Thank you to Bernard Havlovic, Armstrong Research Farm superintendent, and Jeff Butler, ag specialist, for helping select the plot site, applying the pre-plant herbicide, preparing the seed bed, and harvesting the border rows.

**Table 1. 2003 Specialty Soybean Test—South, Iowa State University: Ames, Atlantic, Carlisle, Richland, and Winterset, Iowa**

Entry	Yield <sup>1</sup> bu/a	Maturity <sup>2</sup> date	Lodging <sup>3</sup> score	Height inches	Seed mg/sd	Weight sds/lb	Protein <sup>4</sup> %	Oil %	Character
IA2021	39.6	9/13	1.7	31	132	3440	35.4	19.3	Commodity check
Macon	33.8	9/29	1.7	36	137	3310	36.3	18.5	Commodity check
IA2061	39.4	9/15	2.2	38	143	3170	36.3	19.0	Commodity, yellow hilum
A00-711003	41.1	9/13	1.7	31	120	3790	36.7	18.3	SCN resistant, yellow hilum
A00-711013	38.3	9/13	1.7	31	101	4470	36.3	17.8	SCN resistant, yellow hilum
IA2062	32.1	9/13	1.5	31	193	2360	38.7	17.5	Large seed
IA2040	37.7	9/17	2.0	37	226	2000	37.9	18.5	Large seed
IA2063	36.0	9/17	2.5	38	219	2070	38.0	18.4	Large seed
IA2037	34.9	9/19	1.6	30	215	2110	39.3	17.9	Large seed
A00-913017	33.9	9/23	2.0	33	227	1990	38.4	18.1	Large seed
IA3009	35.4	9/24	2.0	34	236	1930	38.0	18.3	Large seed
IA3015	32.1	9/26	2.5	37	240	1890	37.3	18.5	Large seed
IA2067	36.7	9/11	1.9	36	174	2600	39.7	17.6	Large seed & high protein
IA2047	34.6	9/11	1.7	33	193	2350	39.3	17.8	Large seed & high protein
IA2041	33.8	9/12	1.7	36	150	3020	40.1	17.6	Large seed & high protein
IA2048	35.1	9/13	1.8	33	196	2310	39.2	18.0	Large seed & high protein
IA2054	38.5	9/14	2.1	38	173	2630	39.1	17.6	Large seed & high protein
IA2034	35.0	9/14	2.0	38	164	2760	39.7	17.2	Large seed & high protein
IA2020	34.5	9/16	1.9	41	181	2510	39.1	18.0	Large seed & high protein
IA2049	33.4	9/16	1.8	33	188	2410	39.0	18.0	Large seed & high protein
IA3006	29.8	9/18	1.7	32	190	2390	39.4	17.3	Large seed & high protein
IA3011	33.5	9/19	1.4	34	160	2830	40.1	17.6	Large seed & high protein
IA3021	36.6	9/20	1.3	34	185	2450	38.8	18.2	Large seed & high protein
IA3001	31.7	9/20	2.1	40	156	2910	39.9	18.0	Large seed & high protein
IA3016	31.8	9/27	2.4	34	188	2410	38.9	17.7	Large seed & high protein
IA3022	33.1	9/28	2.4	37	170	2670	39.6	17.4	Large seed & high protein
IA2057	33.5	9/15	2.8	33	71	6420	35.8	18.2	Small seed
IA2058	33.7	9/16	2.6	35	69	6600	35.9	18.1	Small seed
IA2056	33.5	9/16	2.7	33	71	6410	35.7	18.2	Small seed
IA2035	29.1	9/16	2.7	34	63	7190	38.6	14.9	Small seed
IA2055	32.8	9/17	2.7	34	70	6500	35.9	18.0	Small seed
IA2060	34.6	9/18	2.2	36	74	6110	36.5	17.9	Small seed
IA3008	34.2	9/22	3.2	36	69	6540	35.8	17.7	Small seed
IA3013	31.8	9/25	2.7	37	68	6630	35.7	17.5	Small seed
IA4002	30.9	9/29	2.4	41	66	6870	37.9	15.6	Small seed
IA2032	30.8	9/13	1.8	36	174	2600	39.4	17.9	Lipoxygenase-free
IA2027	32.9	9/15	2.2	40	174	2610	38.2	18.8	Lipoxygenase-free
IA3006LF	30.8	9/16	1.6	30	187	2420	38.9	17.7	Lipoxygenase-free
IA2040LF	38.0	9/17	2.0	39	216	2100	38.8	18.3	Lipoxygenase-free
IA3012LF	34.4	9/18	2.4	35	118	3840	36.6	18.2	Lipoxygenase-free
IA3008LF	34.0	9/21	3.0	38	73	6220	36.2	17.8	Lipoxygenase-free
IA3006PR	29.1	9/20	1.7	32	192	2360	39.4	17.7	Phytophthora resistant

<sup>1</sup>Yield: bushels/acre at 13% moisture<sup>2</sup>Maturity: month/day<sup>3</sup>Lodging: 1=erect, 5=prostrate<sup>4</sup>Protein and oil: 13%-moisture basis